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23 DEC 1999

PCT #

FORM PTO-1390
(REV 11-98)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

45/276 Li/Sch

U.S. APPLICATION NO. (if known, see 37 CFR 1.51)

Not Yet Known

PRIORITY DATE CLAIMED

INTERNATIONAL APPLICATION NO.

PCT/EP99/02654

INTERNATIONAL FILING DATE

April 20, 1999

TITLE OF INVENTION

GEMSTONES

APPLICANT(S) FOR DO/EO/US

Ernst Michael Winter, Lothar Schäfer and Thorsten Mathée

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☐ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☐ Other items or information:

"Express Mail" Mailing Label Number EL 391 335 614 USDate of Deposit December 23, 1999

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Mary Ann Copas, Sec'y

U.S. APPLICATION NO. (if known) 37 CFR 1.51
09/7448839
Not Yet KnownINTERNATIONAL APPLICATION NO.
PCT/EP99/02654ATTORNEY'S DOCKET NUMBER
45276 Li/Sch17. ☒ The following fees are submitted:**BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :**

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$970.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$840.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$760.00

International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$670.00

International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$96.00

ENTER APPROPRIATE BASIC FEE AMOUNT =**CALCULATIONS PTO USE ONLY**

\$ 840.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(c)).

\$ 0

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	13 - 20 =		X \$18.00
Independent claims	1 - 3 =		X \$78.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$260.00

\$ 0

\$ 0

\$ 0

TOTAL OF ABOVE CALCULATIONS =

\$ 840.00

Reduction of 1/2 for filing by small entity, if applicable. A Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28).

\$ 0

SUBTOTAL =

\$ 840.00

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(i)).

\$ 0

TOTAL NATIONAL FEE =

\$ 840.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property

\$ 0

TOTAL FEES ENCLOSED =

\$ 840.00

Amount to be:	\$
refunded	
charged	\$

a. ☒ A check in the amount of \$ 840.00 to cover the above fees is enclosed.b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 02-1653. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

ROBERT W. BECKER & ASSOCIATES
11896 N. Highway 14, Suite B
Tijeras New Mexico 87059

SIGNATURE:

Robert W. Becker

NAME

December 23, 1999

REGISTRATION NUMBER

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Date of Deposit December 23, 1999

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Mary Ann Copas, Sec'y

In the Application of

Ernst Michael Winter, Lothar Schäfer and Thorsten Mathée

Ser.No.: Not Yet Known (Based on PCT/EP99/02654 filed April 20, 1999)

Filed: December 23, 1999

For: GEMSTONES

Assistant Commissioner for Patents

Washington, DC 20231

PRELIMINARY AMENDMENT ACCOMPANYING ENTRY INTO NATIONAL STAGE

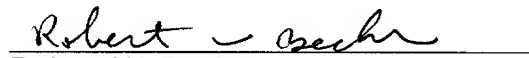
Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE CLAIMS:

To eliminate multiple dependencies, please make claims 3, 4, 5, 6, 8, 9, 10, 11 and 13 dependent on claim 1 only.

Respectfully submitted,


Robert W. Becker
Registration No. 26,255

ROBERT W. BECKER & ASSOCIATES
11896 N. Highway 14, Suite B
Tijeras, New Mexico 87059

Telephone: (505) 286-3511
Facsimile: (505) 286-3524

FORWARDED BY MAIL

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) and 1.27(c)) - SMALL BUSINESS CONCERN

I hereby declare that I am

- ☐ the owner of the small business concern identified below;
☒ an official of the small business concern empowered to act on behalf of the concern identified below.

NAME OF CONCERN Winter CVD Technik GmbH

ADDRESS OF CONCERN Königsgrätzstraße 14, D-22609 Hamburg, Germany

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled

GEMSTONES

by inventors

Ernst Michael Winter, Lothar Schäfer, Thorsten Matthäe

described in:

- ☒ international serial number PCT/EP99/02654 filed 04/20/99
☐ the specification filed herewith.
☒ application serial no. Unknown, filed 12/23/99 in the US Patent Office
☐ patent No. _____ issued _____

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights in the invention is listed below and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Inge Reincke

TITLE OF PERSON OTHER THAN OWNER PROKURIST

ADDRESS OF PERSON SIGNING Königsgrätzstrasse 14; D-22609;
Hamburg, Germany

SIGNATURE _____

DATE 02/11/00



FILED IN 46/276 L/Sch

09/446839

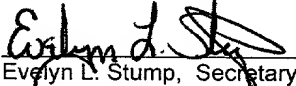
3 Rec'd PCT/PTO 24 MAR 2000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Date of Deposit March 24, 2000

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.


Evelyn L. Stump, Secretary

In the Application of Ernst Michael Winter, et al.

Ser.No.: Not Yet Known (based on DE 298 07 331.5 filed 23 April 1998; DE 298 17 072.8 filed 23 September 1998; DE 298 17 487.1 filed 1 October 1998; DE 298 20 230.1 filed 12 November 1998 and PCT/EP99/02654 filed 20 April 1999)

International

Filing Date: April 20, 1999

For: GEMSTONES

Assistant Commissioner for Patents

Washington, DC 20231

**PRELIMINARY AMENDMENT ACCOMPANYING ENTRY INTO
NATIONAL STAGE APPLICATION**

Sir:

Prior to examination, please amend the above-identified application as follows.

IN THE SPECIFICATION:

On page 1, immediately after the title, please insert the following heading:

--Background of the Invention--.

On page 1, between lines 18 and 19, please insert the following heading:

--Summary of the Invention--.

Page 3, between lines 18 and 19, please insert the following heading:

--Brief Description of the Drawings--.

Page 4, line 1, please insert the following heading:

--Description of Preferred Embodiments--.

On page 5, at the bottom of the page please insert the following paragraph:

The specification incorporates by reference the disclosure of German priority documents DE 298 07 331.5 of 23 April 1998; DE 298 17 072.8 of 23 September 1998; DE 298 17 487.1 of 1 October 1998; DE 298 20 230.1 of 12 November 1998 and European Patent Application priority document PCT/EP99/02654 filed 20 April 1999.

The present invention is, of course, in no way restricted to the specific disclosure of the specification and drawings, but also encompasses any modifications within the scope of the appended claims.

IN THE CLAIMS:

Please cancel claims 1 - 13, and replace them with the attached claims 14 - 25.

IN THE ABSTRACT:

Please replace the literal translation of the abstract with the attached abstract of the disclosure.

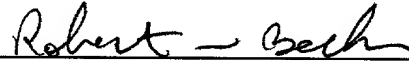
REMARKS

Claims 14 - 25 are pending in the application.

Appropriate headings have been added to the specification, the abstract has been replaced, and the claims from the literal translation have been replaced by claims drafted in conformity with U.S. Patent practice.

The application in its amended state is believed to be in condition for allowance. However, should the Examiner have any comments or suggestions, or wish to discuss the merits of the application, the undersigned would very much welcome a telephone call in order to expedite placement of the application into condition for allowance.

Respectfully submitted,



Robert W. Becker Reg. No. 26,255
for Applicant(s)

ROBERT W. BECKER & ASSOCIATES
11896 N. Highway 14, Suite B
Tijeras, New Mexico 87059

Telephone: (505) 286-3511
Facsimile: (505) 286-3524

WHAT I CLAIM IS:

14. An ornamental stone, comprising:
- at least one visible surface (1) adapted to serve as a support for a structured material layer (5).
- 5 15. The ornamental stone according to claim 14, wherein the visible surface (1) is smooth.
16. The ornamental stone according to claim 14, wherein the material layer (5) is shiny.
17. The ornamental stone according to claim 14, wherein
10 the material layer (5) comprises a precious metal or titanium nitride.
18. The ornamental stone according to claim 14, wherein a metallic layer as a retention intermediary (4) is disposed between the visible surface (1) and the material layer (5).
19. The ornamental stone according to claim 18, wherein
15 the retention intermediary (4) is a titanium or chromium layer.
20. The ornamental stone according to claim 14, which has a body in the form of a diamond layer (3) made via a CVD process with said visible face (1) as a support for the material layer (5).
- 20 21. The ornamental stone according to claim 14, which has a body in the form of a polycrystalline diamond aggregate

(PKD) with said visible face (1) as a support for the material layer (5).

22. The ornamental stone according to claim 14, which has a the visible surface (1) is one or more surfaces that are level,
5 concave, convex, or a mixture thereof.

23. The ornamental stone according to claim 14, wherein a transparent protective layer (7) is disposed on the material layer (5).

24. The ornamental stone according to claim 23, wherein
10 the protective layer (7) is a CVD layer and is made of corundum or diamond.

25. The ornamental stone according to claim 14, which has a body adapted to form a face of a clock.

Abstract of the Disclosure

An ornamental stone is provided having at least one visible surface that supports a structured material layer.

WHAT I CLAIM IS:

14. An ornamental stone, comprising:
at least one visible ¹ surface adapted to serve as a
support for a structured material ⁵ layer.
- 5 15. The ornamental stone according to claim 14, wherein
the visible surface ¹ is smooth.
16. The ornamental stone according to claim 14, wherein
the material ⁵ layer is shiny.
17. The ornamental stone according to claim 14, wherein
10 the material layer comprises a precious metal or titanium nitride.
18. The ornamental stone according to claim 14, wherein
a metallic layer as a retention intermediary ⁴ is disposed between the
visible surface ¹ and the material ⁵ layer.
19. The ornamental stone according to claim 18, wherein
15 the retention intermediary ⁴ is a titanium or chromium layer.
20. The ornamental stone according to claim 14, which
has a body in the form of a diamond ³ layer made via a CVD process
with said visible ¹ face as a support for the material ⁵ layer.
21. The ornamental stone according to claim 14, which
20 has a body in the form of a polycrystalline diamond aggregate
(PKD) with said visible ¹ face as a support for the material ⁵ layer.

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Examiner's use

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22. The ornamental stone according to claim 14, which
has a the visible surface^l is one or more surfaces that are level,
concave, convex, or a mixture thereof.

23. The ornamental stone according to claim 14, wherein
5 a transparent protective layerⁿ is disposed on the material layer.

24. The ornamental stone according to claim 23, wherein
the protective layerⁿ is a CVD layer and is made of corundum or
diamond.

25. The ornamental stone according to claim 14, which
10 has a body adapted to form a face of a clock.

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material layer, preferably a precious metal or titanium nitride layer.
The visible surface can be constructed from the naturally occurring surface of a mineral, such as it is crystallized naturally or synthetically (CVD, PKD).

- 5 The structured material layer which is produced according to the invention with a lithography process imparts not just an attractive appearance to the gemstone. The stone's body, for example, can be a natural stone such as a completely raw diamond, one cut from a stone slab severed from natural stone cut with laser
- 10 technology, one produced according to the CVD technology on a substrate, preferably a silicon separated diamond stratum, or a polycrystalline diamond aggregate (PKD). The structuring of the material layers can be adjusted, such as to be level, concave and/or convex, as well as having preferably smooth surfaces, according to
- 15 the wishes of the purchasers of a stone created by the invention. This structuring can thereby accommodate a piece of jewelry, in which, for example, a portrait, an astrology sign, an ornament or so forth might be displayed. A transparent protective layer, preferably produced from CVD technology, can be used on the material layer
- 20 in order to prevent the structuring from being damaged.

CVD diamond synthesis offers particular advantages with the

manufacturing of the gemstones of the present invention. With this synthesis, diamond surfaces can be created, which cannot be obtained either in nature or with other synthesis processes. While natural diamonds with visible surfaces of 100 mm² are a rarity, 5 gemstones with visible surfaces of, for example, 300 mm and even greater, can be made with the help of CVD diamond synthesis. These stones also make possible complex structuring of the material layer, such as for example for diamond pendants which hold pictures. While natural diamonds are discovered as individual 10 crystals, CVD diamond layers are reproduced via adjustment of the synthesis parameters. This has the advantage, among other things, that on the basis of CVD diamond synthesis, serial editions of jewelry pieces can be manufactured. A further advantage of CVD diamond synthesis is the possibility of varying the coloring of the 15 framed diamond via the synthesis parameters. Likewise, the desired stone qualities for the structuring can be controlled to produced various contrasting tones, such as black, brown, gray and so forth.

An embodiment of the invention is illustrated in the 20 accompanying figure, which shows a schematic sectional view of a gemstone.

The picture or model that is to be placed on the visible face
 1 of a gemstone is digitalized with a scanner and stored in a
 computer. In an image editing program, the gray portions of the
 stored picture are erased, in order to produce a black and white
 5 picture, from which a photo mask is created.

A retention intermediary 4, for example, a titanium or
 chromium layer, is disposed, in order to obtain a secure binding of
 the to be deposited material layer, for example gold layer 5 with the
 diamond, on the visible surface 1 of the gemstone, for example, a
 10 diamond layer 3, which is disposed on a silicon substrate 2 and
 which either remains on the substrate 2 or via a high SP2 portion in
 the layer appears dark. The structure 6 of the gold layer 5, i.e., for
 presentation of a picture, is obtained in a known manner: a photo
 lacquer or varnish is applied on this layer 5, the lacquer bound on
 15 and the photo mask applied on the lacquer so that the photo lacquer
 is exposed through the mask. After the removal of the unexposed
 area of the photo lacquer, the structuring of the gold layer 5 through
 plasma etching in an argon plasma follows. On the structured gold
 layer 5, a transparent protective layer 7 is applied.

20 The invention is not limited to the described examples. For
 one skilled in the art, it implies commonly known modifications. So

either a natural or artificial stone as the medium of a structured material layer for a gemstone of the present invention is suitable, provided a sufficient contact between stone and structure is given. It can be arranged also as several differing material layers on a visible surface, next to or overlapping one another, whereby with corresponding, or congruent, structuring, in particular with the overlapping material layers, holograms can be obtained. The gemstones of the present invention can serve, further, as ornaments or decorations for furnishings or personal effects, such as clocks, vases and so forth or even form the face of a clock, preferably of a wrist watch.

Patent claims: (Literal translation)

1. Gemstone, characterized by at last one visible surface
(1) as a support for a structured material layer (5).
2. Gemstone according to claim 1, characterized in that
5 the visible surface (1) is smooth.
3. Gemstone according to claim 1 or 2, characterized in
that the material layer (5) is shiny.
4. Gemstone according to claim 1, 2 or 3, characterized
in that the material layer (5) is composed of a precious metal.
- 10 5. Gemstone according to claim 1, 2 or 3 characterized
in that the material layer (5) is composed of titanium nitride.
6. Gemstone according to any of the foregoing claims,
characterized by a metallic layer as a retention intermediary (4)
between the visible surface (1) and the material layer (5).
- 15 7. Gemstone according to claim 6, characterized in that
the retention intermediary (4) is a titanium or chromium layer.
8. Gemstone according to any of the foregoing claims,
characterized in that its body comprises a diamond layer 3
manufactured from a CVD process as a support for the material
20 layer (5).
9. Gemstone according to one of the claims 1 through 7,

characterized in that its body is comprises a polycrystalline diamond aggregate (PKD) as a support for the material layer (5).

10. Gemstone according to any of the foregoing claims,
characterized in that its visible surface(s) (1), is/are level, concave
5 and/or convex.

11. Gemstone according to any of the foregoing claims,
characterized in that a transparent protective layer (7) is applied on
the material layer (5).

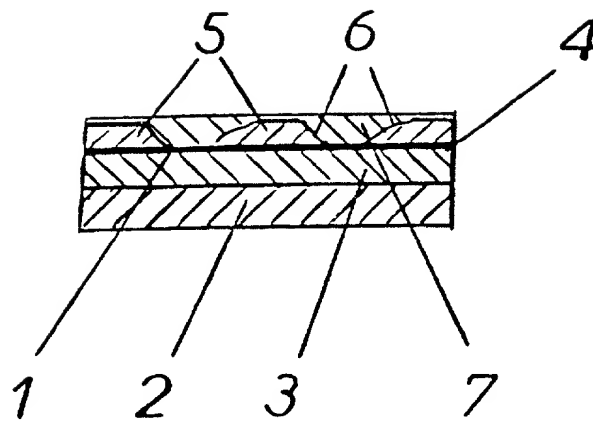
12. Gemstone according to claim 11, characterized in that
10 the protective layer (7) is a CVD-layer and is composed of
corundum or diamond.

13. Gemstone according to any of the foregoing claims,
characterized in that its body forms the face of a clock, in particular
a ring, wrist or jewelry clock.

15

1 / 1

Ernst Mach'sche
Licht



Ernst Mach'sche

Attorney Docket No.
45/275 Li/Sch

COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name; I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought of the invention entitled:

the specification of which

is attached hereto;

was filed on 04/20/1999 as Application Ser.No. as International Application Ser. No. PCT/EP99/02654 and was amended on

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information known by me to be material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s):

(Number)	(Country)	(Day/Month/Year Filed)	Priority Claimed:	Yes	No
298 07 331.5	Germany	23 April 1998	X		
298 17 072.8	Germany	23 September 1998	X		
298 17 487.1	Germany	1 October 1998	X		
298 20 230.1	Germany	12 November 1998	X		

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

(Application Number)

(Filing Date)

I hereby appoint the following attorneys, Robert W. Becker, Reg. No. 26,255, and patent agent, Gudrun E. Hockett, Reg. No. 35,747, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith. Address all telephone calls to (505) 286-3511. Address all correspondence to ROBERT W. BECKER & ASSOCIATES, 11896 N. Highway 14, Suite B, Tijeras, New Mexico 87059.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor: Ernst Michael Winter

Inventor's signature: [Signature] Date: Feb. 7 2000
Residence: Königsgrätzstraße 14, D-22609 Hamburg, Germany
Citizenship: German
Post Office Address: same as above

Full name of second inventor: Lothar Schuster

Inventor's signature: [Signature] Date: Feb. 1, 2000
Residence: Im Moorweg 1, D-38527 Abtesbüttel, Germany
Citizenship: German
Post Office Address: same as above

FORCED "CEASED"

3-20
Full name of third inventor: Thorsten Matthee
Inventor's signature Thorsten Matthee Date: 29. Jan. 2000
Residence: Wesenweg 11A, D-38527 Meine, Germany DE
Citizenship: German
Post Office Address: same as above

1/97

"SECRET" 00140